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A STATISTICAL TEST OF THE SUCCESS OF CONSOLIDATIONS

SUMMARY

Nature of the study, 84. — Underlying assumptions of the study, 86. — I. Previous earnings of the representative consolidation compared with actual earnings, 90. — II. Estimated earnings of the representative consolidation compared with actual earnings, 91. — III. First-year earnings of the representative consolidation compared with later earnings, 93. — Table of fundamental data, 95.

STATEMENTS concerning the advantages or disadvantages of large scale enterprises brought about through combination — the so-called "trusts" — are ordinarily based on certain theoretical assumptions. These *a priori* assumptions have emphasized the various economies and various wastes which are alleged to accompany consolidation. No attempt, however, has been made to apply specific and definable tests to a sufficiently large collection of actual cases to justify generalizations possessing empirical value.[1] To do this is the purpose of the present study. The consolidations here under review were for the most part organized before 1903. A period of at least ten years elapsed, therefore, between their organization and the economic disturbances caused by the Great War. The period affords ample opportunity to judge of the ultimate success or failure of the trusts, since in that time they should have been able to prove the economic advantages of consolidation.

1. A preliminary study of this kind, using fewer corporations and less critical methods, was undertaken by me in another connection. See my Financial Policy of Corporations, vol. iii, p. 221.

The specific problem whether or not large combinations of units of production are successful is divisible into two parts: the definition of success and its specific application to the trusts. In order that our study may have an objective standard we must establish some clearly describable criterion of success; and we must be able to apply it to a sufficiently large group of trusts to give the results at least some semblance of inductive value.

The term success when applied to a business may mean a variety of things. A successful business may be one which is conducted so economically that the commodities it deals in reach the ultimate consumer at a low price relative to the competitive cost of production. It may be one that endures through a long period of time. It may be one that grows in mere size without reference to the relative yield to invested capital or to business ability. And finally it may mean — in fact usually does — a business that yields a relatively large profit to the managers. In the end all these usages are reducible to the last. A business cannot long produce or distribute commodities to the consumers at a relatively low price unless it yields a profit to its managers; it cannot long endure unless the activities of a manager are stimulated by liberal profits; it cannot increase in mere size unless the profit is sufficient to encourage the continuous investment of capital. It is difficult, however, to determine that amount of true profit or of return on invested capital which marks the line between success and failure. Both profit and success are relative terms. But they are relative to what?

In this study three separate standards of relative profit or relative success are used. I shall assume that an industrial combination, in order to be called successful, should yield a larger net profit than the sum of

the net profits of the component elements that entered the combination. This is our first criterion. A second assumption will be that the combination should yield a net profit at least approximately equal to what its proponents, including its bankers, owners, and promoters, estimated that it would yield. And lastly it must be assumed that the average net earnings over a considerable period of time — say ten years — should show a conspicuous increase over the net earnings prior to the combination and during its first year. In other words, there must be a sustained increase. The application of these tests to industrial combinations in general is not as simple as their mere formulation. Something of a more or less arbitrary procedure has to be adopted, involving certain further assumptions. These will be explained in detail as we proceed.

A random selection of thirty-five industrial combinations was chosen which met the following six conditions. In order to qualify for the group the combination must (1) have been in existence at least ten years before 1914, (2) must have been formed as a combination of at least five separate, independent and competing plants, (3) must have a national rather than a mere sectional or local significance, (4) must have published financial reports in which at least some degree of confidence can be placed, (5) must have available published or accessible reports covering the earnings of the separate plants prior to their consolidation and the estimates of earnings made at the time the combination was effected. Lastly, the group as a whole must represent a wide diversity of industries.

A period of ten years was selected as sufficient to enable the "trust" to develop its weaknesses and its strengths; and cases were omitted from the tabulation when this period extended beyond 1914, since extra-

ordinary profits or extraordinary losses due to the Great War might vitiate the calculation. Again, every effort was made to exclude from consideration all corporations not industrial combinations, strictly speaking. This was done by refusing to consider a business organization as an industrial consolidation unless it represented, at the time of its organization, at least five separate and relatively independent units, all previously competitors of each other. This eliminated from consideration large businesses arising from internal growth, with now and then a sporadic addition from the outside, and those businesses arising from the union of only two or three relatively large units. Such combinations should be considered business expansions rather than industrial consolidations. All purely local combinations having only a local market for their products and only a narrow and restricted market for their securities were left out of account. Furthermore, in order to be included in the group a corporation must have available reliable published reports, covering a period of ten years. These reports must be of such character that the annual earning statements can be reduced to something like a uniform basis.[2] Even with the published reports available it was difficult to standardize the accounts; the necessary assumptions and interpretations will be described under the appropriate headings. Lastly, considerable effort was made to obtain a wide distribution of corporations, in order to ensure representation of many different industries. Aside from the purpose to secure such a wide distribution no effort whatever was made to include corporations known to be either successful or unsuccessful — either those which have attained an in-

2. The American Window Glass Company — of which more will be said from time to time — is included notwthstanding the fact that its published reports are inadequate for our purpose. It was included in order that there should be at least one combination allied to the building trades.

vestment standing or those which became bankrupt. It will be observed that the list includes some consolidations, like the United States Envelope Company, which have been conspicuous in their able management and their steadily maintained success, and some others, like the American Window Glass Company, which have been equally conspicuous failures. The majority of the corporations, however, are those reported to have attained a modicum of success.

In preparing the tables the most difficult problem was that of reducing the statements of the different corporations to a uniform basis. It was, in fact, the problem of establishing a uniform system for the accounting of net profits. Owing to the meager data ordinarily furnished by the different corporations, especially those obviously unsuccessful, results were obtainable only by using a large amount of guessing. The statements of the previous earnings were, almost invariably, taken from the published reports of accountants, chosen in the majority of cases by the bankers who underwrote the original security issues at the time of promotion. All estimates or predictions of earnings were, except in the cases explained in footnotes, taken from published statements issued by the bankers or the promoters at the time of promotion. Where more than one prediction was made, the lowest and least extravagant statement was used. A few instances were found of estimates of earnings so extravagant and unreasonable that one is reminded of Johnson's phrase about wealth beyond the dreams of avarice. Such cases were disregarded altogether, even tho they illustrate the extravagant expectations nurtured by some of the trust promotors. And the fact that the most extravagant predictions were often made in connection with consolidations which later proved utter failures, while not pertinent to the

present study, is yet suggestive of the prevailing conception of profits expected through industrial consolidation. The earnings of the first year, as was true of the earnings for the later years, represent the net earnings after taxes and depreciation but before the payment of any interest or dividends. It was generally difficult and sometimes impossible to determine whether or not the company had charged its published net earnings with a reserve for depreciation. When no information of this character was available, the benefit of the doubt was given to the company; that is, it was assumed that the company made proper depreciation charges. In fact, in all cases of uncertainty in the computation of the net earnings the more liberal interpretation was adopted, so that the company was placed in the most advantageous light. The calculation of the average earnings for the first ten years presented no serious problem, except when the date of the beginning of the fiscal year was changed. In such cases the full twelve-month period was computed by a species of dead reckoning. Attention is called to the detailed descriptive notes, indicating the sources of figures and the method of compilation in cases involving some uncertainty. Where there is no reference the figures are taken directly from the annual reports of the corporation.

Table I gives the primary material on which all the others are based. Deductions from it will be discussed, in connection with the subsequent tables, under three headings: (1) the previous earnings of the separate plants before consolidation in comparison with the earnings after consolidation; (2) the estimated earnings at the time of consolidation in comparison with the earnings after consolidation; and (3) the earnings during the first year in comparison with the earnings during a period of years.

The figures in the tables that follow (Tables II to V) are in the nature of index numbers, being ratios expressed on a basis of 100 between the different figures for each of the thirty-five corporations. The medians of each group of thirty-five were computed from these ratios. Certain ratios could not be determined as real integers, because one of the terms was a negative quantity. Other ratios at the extremes of the arrays were very large. For these reasons an inclusive arithmetical average of the entire group of thirty-five ratios would be meaningless. Accordingly averages were computed of the twenty-one ratios lying between and including the quartiles. Owing to the relatively close dispersion in most cases on either side of the median these averages are perhaps more significant than the medians themselves. The closeness with which they approximate the medians should be noted in estimating the statistical value of the general conclusions.

I. Previous Earnings before Consolidation Compared with the Actual Earnings Realized

From Table II it will be observed that the aggregate earnings of the separate competing establishments prior to consolidation were seven-tenths of the earnings estimated to follow consolidation. Roughly, the promotors of the consolidations believed that the mere act of combination would increase the earnings by about a half. But in actual results the earnings before the consolidation were nearly a fifth *greater* (18%) than the earnings of the first year after consolidation. (See also Table V.) The promotors expected the earnings to be a half greater than the aggregate of the competing plants; instead they were about a fifth less. Nor were the sus-

tained earnings an improvement, for the earnings before the consolidation were between a fifth and a sixth greater than the average for the ten years following the consolidation. In brief, the earnings of the separate plants before consolidation were greater than the earnings of the same plants after consolidation.

II. Estimated Earnings at Time of Consolidation Compared with the Actual Earnings Realized

(See Tables III and IV)

The estimated probable earnings made by the promotors at the time the trusts were organized can be reached by two lines of evidence — the prophecies of the promotors themselves and the patterns according to which they cut the financial plans of the embryo corporations. The former we can consider the direct line of evidence, the latter the indirect line.

When we compare the estimates of the promotors covering the earnings of the new corporations with the earnings actually realized, some striking results are apparent. See Table III.

So confident were the promotors and bankers of the success of the trusts that they estimated the earnings resulting from consolidation to be a little over a third greater than the earnings of the separate plants before consolidation. On the basis of this estimate they considered themselves safe in making the sum of the fixed charges on the bonds and the dividends on the preferred stock to be less than a half of the estimated earnings. This conservative procedure would have worked well in practice, provided the actual earnings following consolidation had even approximated the estimates made by the promotors. But they did not. The estimated earnings were half again as large as the actual earnings of

the first year after the union, and nearly twice as great (175 %) as the average earnings during the ten-year period following consolidation. The divergence between the estimates and the actual results is even more apparent when we observe that in only four out of the thirty-five cases did the earnings during the year following consolidation equal or exceed the estimates made by the promotors; and in only five cases — one-seventh of the total — did the average earnings for the ten-year period following consolidation equal or exceed the estimates made by the promotors and bankers at the time the trust was organized.

This conclusion is indirectly shown by the relative load of fixed charges and contingent preferred stock dividends placed upon the trusts at the time of consolidation. It is a well known and thoroly established principle of financial practice that the fixed interest charges and contingent preferred stock dividends of industrial or manufacturing corporations should not be more than half the net earnings, after reasonable, but not extraordinary, allowances have been made for depreciation and obsolescence. In the case of these industrial combinations it amounted to nearly three-fourths of the net earnings of the first year and the tenth year, and nine-tenths (90 % average between quartiles) of the average earnings of the ten-year period after consolidation. See Table IV.

III. Comparison of the Earnings of Industrial Consolidations Immediately After Consolidation with Later Earnings

The ratios given in Table V are intended to compare the earnings of each industrial consolidation during the first full year of its existence with the earnings before consolidation and with the earnings after the trust has been fully established.

The later earnings, however, should be subject to some adjustment. In almost every case new capital was invested by the managers of the consolidation in betterments and improved equipment, not properly chargeable to depreciation and reasonable obsolescence. In some cases, like the acquisition of the Tennessee Coal and Iron Company by the United States Steel or of the Guggenheim plants by the International Steam Pump, whole units were added to the aggregate of property already owned by the trust at the time of its organization. The betterments and the new plants added materially to the net earnings of the combination, or should have done so provided the promise of increased earnings through enlarged scale of production was fulfilled. Strict accounting would require that the average net earnings for the ten-year period and the net earnings for the tenth year should be reduced by amounts corresponding to the presumptive earnings of the added capital before these earnings were compared with the earlier earnings. However, such adjustments to the reported net earnings because of actual additions to property would be very difficult to make and controversial at best. Accordingly no such adjustments were made, so that the figures for the ten-year average and of the tenth-year earnings are greater than

those of the groups of plants entering the consolidation or contributing to the earnings of the first year.

The representative earnings of consolidation during the first year were less, by about a tenth, than the average earnings during the ten-year period. The ten-year period began, in twenty cases out of the thirty-five, in 1900; it included, therefore, quite as many years of marked business activity as of marked business depression. The earnings of the first year after consolidation were greater — by a little less than a tenth (7 %) — than the earnings of the tenth year. In other words, after sufficient time had elapsed to permit the consolidation to perfect its organization, to reconstruct its plants and to effect all the anticipated economies of combination and large-scale production, and after considerable sums of new money had been invested in betterments and new plants, the earnings gradually diminished until they were no more, perhaps a little less, than during the first year of consolidation. And the first-year earnings, as has been shown already, were less than the earnings of the separate plants before consolidation.

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TABLE I. — FUNDAMENTAL DATA

	Name	Date incorporated	Bonds issued at incorporation	Preferred stock	Preferred stock dividend	Fixed charges
1	U. S. Leather	1893	$6,000,000	$62,282,300	8 c[3]	$360,000
2	Am. Matting	1897	none	2,500,000	7 c	none
3	Am. Linseed	1898	none	16,750,000	7 n	none
4	U. S. Envelope	1898	2,000,000	3,750,000	7 c	120,000
5	Inter. Paper	1898	8,699,000	20,530,700	7 c	521,940
6	Am. Agri. Chem.	1899	none	17,000,000	6 c	none
7	Am. Beet Sugar	1899	none	4,000,000	6 n	none
8	Am. Car and Foundry	1899	none	30,000,000	7 n	none
9	Am. Cement	1899	930,000	none	none	46,500
10	Am. Chicle	1899	none	3,000,000	6 c	none
11	Am. Hide and Leather	1899	8,445,00	13,000,000	7 c	506,700
12	Am. Pneu. Tube Service	1899	none	5,000,000	6 n	none
13	Am. Window Glass	1899	none	4,000,000	7 c	none
14	Am. Woolen	1899	none	16,000,000	7 c	none
15	Am. Writing Paper	1899	17,000,000	12,500,000	7 c	850,000
16	Inter. Steam Pump	1899	none	8,850,000	6 c	none
17	Natl. Enam. and Stamp	1899	none	7,375,000	7 c	none
18	Natl. Salt	1899	none	5,000,000	7 c	none
19	N. E. Cotton Yarn	1899	5,591,000	5,000,000	7 c	279,553
20	Pittsburgh Coal	1899	none	32,000,000	7 c	none
21	Pressed Steel Car	1899	none	12,500,000	7 c	none
22	Republic Iron and Steel	1899	none	25,000,000	7 c	none
23	Rubber Goods Mfg.	1899	none	6,196,000	7 c	none
24	Sloss-Sheffield	1899	3,835,000	6,700,000	7 n	202,575
25	Univ. Bag and Paper	1899	none	11,000,000	7 c	none
26	Crucible Steel	1900	none	25,000,000	7 c	none
27	Standard Milling	1900	5,750,000	6,900,000	6 n	287,500
28	Allis Chalmers	1901	none	25,000,000	7 c	none
29	Am. Locomotive	1901	none	25,000,000	7 c	none
30	Quaker Oats	1901	1,600,000	7,500,000	6 c	80,000
31	U. S. Steel	1901	304,000,000	425,000,000	7 c	15,200,000
32	Harbison Walker Refractories	1902	3,500,000	8,000,000	6 c	175,000
33	Natl. Candy	1902	none	2,200,000	7 c	none
34	Inter. Merc. Marine	1902	68,000,000	54,600,000	6 n	3,140,000
35	United Box Board and Paper	1902	3,873,000	14,948,900	7 c	197,380

3. Under table of preferred stock dividend "c" denotes cumulative dividends and "n" denotes non-cumulative dividends.

TABLE I. — FUNDAMENTAL DATA (*continued*)

Contingent charges (preferred dividends)	Previous earnings	Estimated earnings	Fixed and contingent charges	First year	Tenth year	Average for ten years
$4,982,184	$4,800,000[1a]	$4,900,000[1b]	$5,342,584	$1,340,494[1c]	$4,784,997	$3,753,839[1d]
175,000	1,300,000[2a]	2,300,000[2b]	175,000	225,000[2c]	−157,503	393,117[2d]
1,172,500	1,094,374[3a]	1,800,000[3b]	1,172,000	−1,083,858[3c]	166,538	113,200[3d]
262,500	428,848[4a]	828,848[4b]	382,500	457,523	573,557	497,375
1,437,149	4,100,000[5a]	5,600,000[5b]	1,959,089	2,845,035	1,635,918	2,393,172
1,020,000	1,419,879[6a]	2,040,000[6b]	1,200,000	1,615,594[6c]	2,394,498	1,680,238
240,000	428,045[7a]	1,248,000[7b]	240,000	240,359[7c]	1,470,611	612,313
2,100,000	2,900,000[8a]	4,000,000[8b]	2,100,000	4,915,671[8c]	2,895,831	5,050,963
none	323,000[9a]	350,000[9b]	46,500	250,619[9c]	152,352	278,480
180,000	560,000[10a]	540,000[10b]	180,000	688,510[10c]	1,530,000	1,199,896
910,000	1,585,748[11a]	2,750,000[11b]	1,416,700	926,582[11c]	2,085,996	1,024,938[11d]
300,000	281,449[12a]	381,449[12b]	300,000	288,616	144,959	162,316
280,000	1,466,182[13a]	2,500,000[13b]	280,000	373,357	−556,718[13d]	−13,638[13d]
1,120,000	2,593,000[14a]	3,000,000[14b]	1,120,000	3,287,006	4,179,522	2,808,783
875,000	1,250,620[15a]	2,200,000[15b]	1,725,000	837,997[15c]	1,410,841	1,172,863
531,000	1,317,791[16a]	2,500,000[16b]	531,000	1,813,907	1,447,653	1,671,440
516,250	1,073,000[17a]	1,589,250[17b]	516,250	1,442,589[17c]	924,596	1,198,555
350,000	450,000[18a]	600,000[18b]	350,000	478,145	547,198	680,336
350,000	1,106,197[19a]	1,600,000[19b]	629,550	1,086,500[19c]	355,602	721,595[19d]
2,240,000	4,078,274[20a]	5,414,089[20b]	2,240,000	3,181,568[20c]	1,822,557	3,388,080
875,000	1,500,000[21a]	3,000,000[21b]	875,000	2,237,000	155,478	1,875,849
2,750,000	2,679,000[22a]	3,445,000[22b]	1,750,000	3,643,729	1,629,346	2,013,055
433,762	1,177,228[23a]	1,200,000[23b]	433,762	629,821[23c]	2,369,972	1,076,308
469,000	1,355,000[24a]	2,380,000[24b]	671,575	1,100,424[24c]	1,336,947	1,237,965
770,000	1,226,000[25a]	1,562,000[25b]	770,000	1,494,169	956,920	964,540
1,750,000	4,000,000[26a]	4,000,000[26b]	1,750,000	3,250,429[26c]	3,523,402	1,876,704
345,000	922,873[27a]	1,172,873[27b]	632,500	605,948[27c]	766,737	660,006
1,750,000	1,137,500[28a]	3,290,000[28b]	1,750,000	1,442,260	−18,600[28d]	707,945
1,750,000	3,000,000[29a]	3,600,000[29b]	1,750,000	3,107,177	4,122,870	4,446,091
450,000	639,248[30a]	2,000,000[30b]	530,000	540,745	1,780,095	1,052,579
29,750,000	108,000,000[31a]	100,000,000[31b]	44,950,000	98,551,542[31c]	107,830,000[31d]	92,931,854[31d]
480,000	806,572[32a]	1,116,000[32b]	655,000	1,036,489[32c]	1,325,549	1,401,543
154,000	335,000[33a]	465,277[33b]	154,000	175,655[33c]	168,255	247,556
3,276,000	6,107,675[34a]	16,100,000[34b]	6,416,000	4,000,522[34d]	3,941,747[34d]	3,439,514[34d]
1,046,423	1,667,000[35a]	1,872,000[35b]	1,243,803	279,710[35c]	182,874	282,282

NOTES FOR TABLE I

1*a*. Prospectus of company. See Dewing, A. S., Corporate Promotions and Reorganizations, p. 21.

1*b*. This is one of the three cases in which the estimate of earnings was not obtained from printed sources. One of the tanners stated in conversation that the "net saving would be at least $300,000, which would result in increased profits." On this basis the estimated earnings were obtained by adding the "previous earnings" to $100,000. Unquestionably the tanners believed that the profits would be vastly larger. They planned numerous "economies," and laid great stress in their conversations with bankers upon the increased earnings following the suspension of competition. The figure used here is, therefore, very much less than that confidently expected by the promotors. See also ibid., p. 21.

1*c*. This represents the first full year. 60 Commercial and Financial Chronicle 391. (The references to this periodical will be abbreviated hereafter, Chron.)

1*d*. In computing the average, the published earnings for the first 20 months were reduced to a 12-month basis. This gave the constructive earnings of the first year as $472,053. This reconstruction was necessitated by the change in the corporation's fiscal year. See table of earnings, Dewing, Corporate Promotions and Organizations, p. 22, footnote 3.

2*a*. Average of the preceding five years, 65 Chron. 619.

2*b*. Ibid.

2*c*. Dewing, Corporate Promotions and Reorganizations, p. 294, footnote 1.

2*d*. Earnings for third year, adjusted owing to change in fiscal year.

3*a*. Average of preceding four years, 67 Chron. 1206.

3*b*. Estimate of "$1,800,000 to $2,000,000." Ibid.

3*c*. Computed by adding five-twelfths of the profits of 1900 to the deficit for the 7 months of 1899 during which company operated.

3*d*. From 1902 to 1909 the company published no reports. The probable profits have been constructed from the surplus as at the beginning and end of the period, with adjustments for capital expenditures during the intervening period.

4*a*. 66 Chron. 1003.

4*b*. Ibid.

5*a*. 67 Chron. 177.

5*b*. 13 U. S. Ind. Com. of 1901, 409.

6*a*. Average preceding five years, 68 Chron. 974.

6*b*. This is the second of the three cases in which the estimate of earnings is not obtained from printed sources. It is based on two statements, both agreeing that the company would be able to earn at least 6 per cent on its common stock. One of these statements was made by a prominent manufacturer to a small independent who was asked to enter the consolidation. One other was made to a banker by a man close to the promotion.

6*c*. Adjusted to 12 months from published statement of 14 months.

7*a*. Average preceding two years, 68 Chron. 280.

7*b*. Ibid.

7*c*. Adjusted to 12 months from published statement of 21 months.

8*a*. 68 Chron. 1029.

8*b*. 68 Chron. 280.

8*c*. Adjusted to 12 months from published statement of 14 months.

9*a*. 69 Chron. 1249.

9*b*. Ibid.

9*c*. Adjusted to 12 months from published statement of 16 months.

10*a*. 68 Chron. 1021.

10*b*. Ibid.

10*c*. From published statements the earnings for the first period of 13 months were constructed. This figure was then adjusted to a 12-month basis.

11*a*. 70 Chron. 77.

11*b*. 69 Chron. 646. More extravagant estimates were made by the promotor. One Thomas J. Ryan, in Shoe and Leather Reporter, May 18, 1899, estimated "economies of consolidation" at $4,000,000; in ibid., May 24, 1899, $5,300,000 to $6,900,000 or "7% on the preferred and from 8% to 12% on the common stock."

11*c*. Adjusted to 12 months from published statement of 9 months.

11*d*. The sinking fund on the bonds was deducted, as was not done in other cases, from the net earnings because the management and its auditors specifically state that the sinking fund on the bonds was a charge in lieu of depreciation.

12*a*. Given at $300,000 in 68 Chron. 1130. Figure stated above taken from banker's circular, at time of promotion.

12*b*. Banker's circular at time of promotion.

13*a*. Average for preceding three years, 69 Chron. 745.

13*b*. 69 Chron. 745.

13*d*. The company published no reports from 1902 to 1909, due probably to the excessive losses it was enduring. On September 1, 1902, the report showed an apparent surplus of $819,862. On September 1, 1909, the report showed an apparent deficit of $3,067,165. The above average is based on the assumption that the net loss of $3,897,027 during the intervening seven years can be prorated — $556,718 average loss per year.

14*a*. 68 Chron. 472.

14*b*. This is the third of the three cases in which the estimate of earnings is not obtained from printed sources. The bankers who were interested in the underwriting of the securities were assured by the mill operators that the company would earn "6% on its common stock" and would probably do better. This estimate is, therefore, computed as the preferred dividend of 7 per cent together with a common dividend of 6 per cent.

15*a*. Average for the preceding ten years, 69 Chron. 128.

15*b*. 69 Chron. 128.

15*c*. Adjusted to 12 months from published statement of 17 months.

16*a*. 1900 Moody 617.

16*b*. 68 Chron. 723.

17*a*. 68 Chron. 187.

17*b*. Ibid.

17*c*. Adjusted to 12 months from published statement of 11 months.

18*a*. 68 Chron. 524.

18*b*. Ibid.

19*a*. 69 Chron. 81; Dewing, Corporate Promotions and Organizations, p. 316.

19*b*. Ibid.

19*c*. Adjusted to 12 months from published statement of 11½ months.

19*d*. Computed from successive published balance sheets. Sinking fund on bonds deducted from net earnings as company considered such charges were made in lieu of depreciation.

20*a*. 69 Chron. 442.

20*b*. Ibid.

20*c*. Adjusted to 12 months from published statement of 16 months.

21*a*. 68 Chron. 131.

21*b*. Ibid.

22*a*. 68 Chron. 674.

22*b*. Ibid.

23*a*. 68 Chron. 872.

23*b*. Ibid.

23*c*. Adjusted to 12 months from published earnings of 11 months.

24*a*. 69 Chron. 286.

24*b*. 8 Ind. Com. Rep. of 1901, 55.

24*c*. 72 Chron. 774.

25*a*. 68 Chron. 333.

25*b*. Ibid.

26*a*. 73 Chron. 841.

26*b*. 71 Chron. 32. "Confidently expected earnings will be largely increased." This was the current report in the Pittsburgh district. One rumor stated that the earnings would be "twice as great." Nevertheless, in the absence of direct evidence for a larger estimate, the estimated earnings were considered the same as the previous earnings.

26*c*. Adjusted to 12 months from published earnings of 13 months.

27*a*. 68 Chron. 929.

27*b*. Ibid.

27*c*. 75 Chron. 1252. Reference inexact "12 to 14 mos." Computed on average of 13 months and reduced to 12 months basis.

28*a*. 72 Chron. 874.

28*b*. 72 Chron. 937.

28*d*. Boston News Bureau, October 12, 1911—after allowing for depreciation.

29*a*. 72 Chron. 1036.

29*b*. Boston News Bureau, November 14, 1901.

30*a*. 68 Chron. 329.

30*b*. Ibid.

31*a*. Wilgus, United States Steel Corp., p. 33.

31*b*. 72 Chron. 441.

31*c*. Adjusted to 12 months from published earnings of 9 months.

31*d*. The computation of the United States Steel Corporation's "net earnings" has always presented considerable difficulties owing to the management's avowed purpose of charging capital betterments to earnings. Wall Street has interpreted this policy as "squeezing out the water." Expedient tho it may be from the standpoint of business, it is disconcerting to the statistician, especially in an inquiry like the present, where uniformity in methods of accounting is a prerequisite to the value of any of the conclusions. In this study the net earnings of the United States Steel Corporation were computed as the sum of: surplus for the year, sinking fund on subsidiary and parent bonds and interest of United States Steel Company bonds, expenditures made for additional property, preferred and common stock dividends.

32*a*. 74 Chron. 1359.

32*b*. Ibid.

32*c*. Adjusted to 12 months from published earnings of 15 months.

33*a*. Average of three years, 75 Chron. 983.

33*b*. Estimate computed from estimated capacity (75 Chron. 983) reduced to current basis of profit.

33*c*. Adjusted to 12 months from published earnings of 15 months.

34*a*. 76 Chron. 975. In 79 Chron. 157, it is stated that the average for the preceding 5 years, before depreciation, was $6,519,017. Also, by dead reckoning, the estimated earnings would appear to be $9,500,000, provided tonnage of 1903 had been in service.

34*b*. Ripley, W. Z., Trusts, Pools, and Corporations, p. 107.

34*d*. These are based on the published earnings. Later the management admitted that the depreciation reserves had been inadequate and charged off a lump sum from the excessive earnings of the Great War. An attempt was made in another connection to determine the earnings more accurately by prorating the depreciation. The largest published earnings, however, were used here so as to give the corporation the benefit of a possible doubt. See Dewing, Financial Policy of Corporations, vol. 4, p. 49.

35*a*. Average of preceding three years, 75 Chron. 247.

35*b*. 75 Chron. 1044.

35*c*. Adjusted to 12 months from published earnings of 5 months 6 days.

TABLE II. — EARNINGS OF THE SEPARATE PLANTS BEFORE CONSOLIDATION COMPARED WITH EARNINGS AFTER CONSOLIDATION

	Previous to estimated earnings	Previous to sum of fixed and contingent	Previous to first year	Previous to tenth year	Previous to ten-year average
1	98.0	90.0	large	100.3	128.0
2	56.5	743.1	577.5	large	330.8
3	60.8	93.3	large	658.0	966.0
4	51.7	111.8	93.9	74.9	86.2
5	73.3	209.3	144.1	250.9	171.5
6	69.6	118.2	87.8	59.3	84.5
7	34.3	178.4	178.6	29.1	70.0
8	72.6	138.1	58.9	100.1	58.5
9	92.3	69.0	128.8	212.2	115.9
10	105.7	311.0	81.4	36.6	46.7
11	57.7	112.0	171.2	75.9	154.8
12	73.8	93.7	98.0	194.2	173.1
13	58.7	523.6	393.1	large	large
14	86.4	231.2	78.9	62.0	92.4
15	56.9	72.5	149.5	88.7	106.6
16	52.7	248.0	72.6	91.1	78.7
17	67.5	208.1	74.4	116.2	89.6
18	75.0	128.6	93.1	82.2	66.1
19	69.1	176.0	101.8	311.8	153.5
20	75.3	182.0	128.1	223.9	120.4
21	50.0	171.3	67.1	9.6	79.8
22	74.8	147.5	70.7	158.3	128.1
23	98.3	272.0	187.1	49.7	109.3
24	56.9	201.9	123.1	101.3	109.5
25	78.5	159.3	82.2	129.5	128.5
26	100.0	228.5	123.0	113.4	213.0
27	78.6	146.1	152.2	120.4	139.6
28	34.6	64.9	78.8	large	160.6
29	83.3	171.6	96.5	72.8	67.5
30	32.0	120.8	118.2	35.9	60.8
31	108.0	240.3	109.6	100.1	116.2
32	72.7	123.0	77.8	60.8	57.5
33	72.0	218.5	191.0	199.1	135.4
34	37.9	95.3	152.6	154.9	177.1
35	89.0	134.1	596.0	912.5	588.5
Median	72.6	171.3	118.2	101.3	116.2
Average between quartiles	70.1	166.8	118.5	122.4	118.5

TABLE III.—PROMOTORS' ESTIMATES OF EARNINGS COMPARED WITH PREVIOUS AND LATER EARNINGS

	Estimated to previous	Estimated to sum of fixed and contingent	Estimated to first year	Estimated to tenth year	Estimated to ten-year average
1	102.1	91.6	large	102.4	132.4
2	177.0	1314.0	1022.2	large	585.0
3	164.5	153.3	large	108.2	1589.0
4	193.2	216.5	181.1	144.5	166.7
5	136.6	285.9	196.8	342.5	234.1
6	143.7	170.0	126.3	85.2	121.5
7	291.0	520.0	519.6	84.8	203.9
8	137.9	190.5	82.4	138.1	79.2
9	108.6	752.9	139.6	229.8	125.6
10	96.5	300.0	78.4	35.3	45.0
11	173.5	194.1	297.0	131.8	268.5
12	135.6	127.2	132.1	263.2	235.0
13	171.0	893.5	669.1	large	large
14	115.7	267.9	91.3	71.7	107.1
15	175.9	127.5	262.9	155.9	188.7
16	190.0	471.6	137.8	172.9	149.5
17	148.0	307.5	110.1	172.0	132.5
18	133.5	171.5	125.6	109.6	88.3
19	144.7	254.2	147.2	451.1	222.0
20	132.9	241.9	170.2	297.6	159.9
21	200.0	343.0	134.4	1930.5	160.1
22	128.7	197.1	94.6	211.7	171.2
23	102.1	277.0	190.8	50.7	111.5
24	175.5	354.5	216.3	178.1	192.5
25	127.5	202.9	104.5	165.2	162.1
26	100.0	228.3	123.0	113.5	213.2
27	127.2	185.4	193.5	152.9	177.7
28	289.0	188.1	227.9	large	464.9
29	120.0	205.9	115.8	87.3	81.0
30	312.9	377.6	370.0	112.2	189.9
31	92.6	222.5	102.9	92.7	107.8
32	138.5	170.5	108.6	84.2	79.8
33	138.9	302.2	265.2	277.0	188.4
34	263.9	251.1	402.7	408.0	467.0
35	112.4	150.3	669.2	102.3	662.0
Median	138.5	228.3	147.2	165.2	171.2
Average between quartiles	145.0	239.4	186.1	189.2	174.8

TABLE IV. — COMPARISON OF THE SUMS OF THE FIXED AND CONTINGENT CHARGES, WITH THE PREVIOUS, THE ESTIMATED AND THE LATER EARNINGS

	Sum of fixed and contingent to previous	Sum of fixed and contingent to estimated	Sum of fixed and contingent to first year	Sum of fixed and contingent to tenth year	Sum of fixed and contingent to ten-year average
1	111.2	109.0	large	111.6	142.4
2	13.5	7.6	77.7	large	44.5
3	107.1	65.2	none	732.5	1039.0
4	89.8	46.4	84.3	67.2	77.3
5	47.8	35.0	68.8	119.7	83.9
6	84.8	58.9	74.6	50.3	71.6
7	56.0	19.2	99.9	16.3	39.2
8	72.4	52.5	42.7	72.5	41.5
9	14.4	13.3	18.6	30.5	16.7
10	32.1	33.3	26.1	11.8	15.0
11	89.2	51.5	152.9	68.7	138.3
12	106.6	78.7	104.7	207.1	184.7
13	19.1	11.2	75.1	large	large
14	43.2	37.3	34.1	26.8	39.9
15	138.0	78.3	205.9	122.1	147.1
16	40.3	21.2	29.3	36.7	31.8
17	48.0	32.4	35.7	55.8	43.1
18	77.8	58.3	73.2	64.0	51.4
19	56.8	39.4	57.9	177.3	87.3
20	54.8	41.3	70.3	122.8	66.1
21	58.3	29.2	39.1	563.0	46.7
22	65.3	50.8	48.0	107.4	86.9
23	36.8	36.1	68.9	18.3	40.3
24	45.5	25.9	56.0	50.3	54.3
25	62.8	49.2	51.5	80.5	79.8
26	43.8	43.8	53.8	49.7	93.2
27	68.5	53.9	104.4	82.5	95.8
28	153.9	53.2	121.1	large	247.1
29	58.3	48.6	56.3	42.4	39.4
30	82.9	26.5	98.1	29.6	50.3
31	41.6	45.0	45.7	41.7	48.4
32	81.3	58.7	63.2	49.4	46.7
33	45.9	33.1	87.7	91.5	62.2
34	105.0	39.9	160.4	162.8	186.5
35	74.6	66.3	444.0	690.0	439.2
Median	58.3	43.8	70.3	72.5	71.6
Average between quartiles	62.7	43.4	72.3	72.1	90.1

TABLE V. — COMPARISON OF THE EARNINGS OF THE FIRST YEAR WITH THE PREVIOUS ESTIMATED AND LATER EARNINGS

	First year to previous earnings	First year to estimated earnings	First year to sum of fixed and contingent charges	First year to tenth-year earnings	First year to ten-year average
1	small	small	small	small	small
2	17.3	9.8	128.5	large	57.2
3	small	small	small	small	small
4	106.9	55.2	119.5	79.8	92.0
5	69.5	50.8	145.2	174.1	119.0
6	113.9	79.2	134.7	67.5	96.2
7	56.2	19.3	100.3	16.4	39.4
8	169.6	122.9	234.2	169.8	97.5
9	77.7	71.7	539.0	164.6	90.0
10	121.9	127.4	382.5	45.0	57.4
11	58.4	33.7	65.4	44.4	90.4
12	102.6	75.5	96.3	199.2	177.9
13	25.5	14.9	133.5	small	small
14	126.9	109.6	298.8	78.7	117.1
15	67.1	38.1	48.6	59.4	71.4
16	137.7	72.6	361.1	125.4	108.5
17	134.3	90.8	279.8	156.2	120.4
18	106.2	79.7	136.6	87.5	70.3
19	98.4	68.0	172.9	306.5	150.7
20	78.0	58.8	142.0	174.6	93.9
21	149.0	74.5	255.7	1437.0	119.1
22	136.2	105.8	208.4	223.9	181.2
23	53.4	52.5	145.0	26.6	58.4
24	81.3	46.3	164.1	82.3	89.0
25	121.8	95.7	194.1	156.2	155.0
26	81.3	81.3	185.9	92.2	173.5
27	65.8	51.7	95.8	79.1	91.9
28	126.8	43.8	82.4	large	203.8
29	103.6	86.3	177.7	75.3	69.9
30	84.7	27.1	102.2	30.4	51.5
31	91.1	98.6	219.1	91.3	106.1
32	128.6	92.8	158.3	78.2	73.9
33	52.4	37.8	114.0	104.5	71.0
34	65.6	24.8	62.4	101.5	116.5
35	16.7	14.9	22.4	152.2	98.7
Median	84.7	58.8	142.0	91.3	91.9
Average between quartiles	89.4	60.7	145.1	107.8	89.6